

Claims

What Is Claimed Is:

- 5 1. A method for providing user authentication comprising:
- (a) sending, by a first unit, user identification data to an authentication unit;
- 10 (b) using the user identification data to determine which intermediate destination unit will receive an authentication code to be used to authenticate the user;
- (c) sending the authentication code to the determined intermediate destination unit based on the user identification data via a first secondary channel;
- 15 (d) re-transmitting , by the intermediate destination unit, the authentication code to the first unit via a second secondary channel in a way that is transparent to the user;
- (e) in response to receiving the re-transmitted authentication code from the intermediate destination unit, returning the authentication code to the authentication unit; and
- 20 (f) authenticating the user when the returned authentication code is determined to be suitable.
2. The method of claim 1 including the step of providing selection of a third unit transparent authentication code submission scheme and selecting the third unit
- 25 transparent authentication code scheme in response to receiving selection data.
3. The method of claim 1 including the step of maintaining per user destination unit data including at least one destination unit identifier per user and wherein the step of using the user identification data to determine which destination unit will
- 30 receive the authentication code includes sending the authentication code to the

determined intermediate destination unit based on the stored per user destination unit identifier.

4. The method of claim 1 wherein the second secondary channel is short range
5 channel and including the step of notifying, by the second unit, the first unit of a short range secondary channel used to receive the retransmitted authentication code from the third unit.
5. The method of claim 1 including the steps of:
10 prior to returning the authentication code to the authentication unit, digitally signing, by the first unit, the returned authentication code to produce a digitally signed authentication code that was received from the determined destination unit; and
15 verifying the digitally signed authentication code as part of step (f).

8. A method for providing user authentication comprising:

sending, by a first unit, user identification data to an authentication unit;

5 receiving a re-transmitted authentication code that was previously sent by an authentication unit to an intermediate destination unit; and

in response to receiving the re-transmitted authentication code from the intermediate destination unit, returning the authentication code to the authentication unit.

10 9. The method of claim 8 including the step of controlling a short range receiver to receive the re-transmitted authentication code in response to receiving notification from the authentication unit and wherein returning the authentication code to the authentication unit includes returning the authentication code in a way that is transparent to the user of the first unit.

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10. A storage medium comprising:

memory containing executable instructions that when executed by one or more processors, causes the one or more processors to:

send, by a first unit, user identification data to an authentication unit;

use the user identification data to determine which intermediate destination unit will receive an authentication code to be used to authenticate the user;

send the authentication code to the determined intermediate destination unit based on the user identification data via a first secondary channel;

re-transmit, by the intermediate destination unit, the authentication code to the first unit via a second secondary channel in a way that is transparent to the user;

in response to receiving the re-transmitted authentication code from the intermediate destination unit, return the authentication code to the authentication unit; and

authenticate the user when the returned authentication code is determined to be suitable.

11. The storage medium of claim 10 including memory containing instructions that when executed by one or more processors, causes the one or more processors to provide selection of a third unit transparent authentication code submission scheme and selecting the third unit transparent authentication code scheme in response to receiving selection data.

12. The storage medium of claim 10 wherein the second secondary channel is short range channel and including memory containing instructions that when executed by one or more processors, causes the one or more processors to notify, by the second unit, the first unit of a short range secondary channel used to receive the retransmitted authentication code from the third unit.

13. A system for providing user authentication comprising:

a first unit;

a second unit operatively coupleable to the first unit via a primary wireless channel and operatively coupleable to an authenticator; and

5 a third unit, operatively coupleable to the second unit via a wireless back channel and operatively coupleable to the first unit via a secondary short range channel,

the first unit operative to send primary authentication information via the primary channel during a session to the second unit;

10 the authenticator operative to use the primary authentication information to determine which destination unit, other than the first unit, will receive an authentication code as secondary authentication information via the wireless back channel and wherein the destination unit is the third unit;

15 the second unit operative to send the authentication code on the wireless back channel to the destination unit based on the primary authentication information sent via the primary channel during the same session;

the destination unit operative to re-transmit the authentication code to the first unit via a second secondary channel in a way that is transparent to a user of the first unit;

20 the first unit operative to return the authentication code on the wireless primary channel to the second unit during the same session; and

the authenticator operative to authenticate the user when the returned authentication code received from the wireless primary channel is determined to be suitable.

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14. The system of claim 13 wherein the authenticator maintains per user destination unit data including at least one destination unit identifier per user and sends the authentication code to the second unit for transmission to the destination unit based on the stored per user destination unit identifier.

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15. The system of claim 13 wherein the first unit includes a cryptographic engine and prior to the first unit returning the authentication code for the authenticator, digital signs the returned authentication code to produce a digitally signed authentication code that was received from the third unit; and wherein the authenticator verifies the digitally signed authentication code as part of authenticating the user.
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16. An apparatus for providing user authentication comprising:

means for receiving from an authentication unit via a first secondary channel, an authentication code for a first unit; and

means for re-transmitting the authentication code to the first unit via a second secondary channel in a way that is transparent to a user of the first unit.

17. The apparatus of claim 16 including a transformation circuit that transforms the authentication code prior to re-transmitting via the second secondary channel.

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